Life Cycle Sustainability Assessment for the Production of High-Grade Concrete from Contruction and Demolition Waste

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Publication date:
2012

DTU Management Engineering
Department of Management Engineering

DTU

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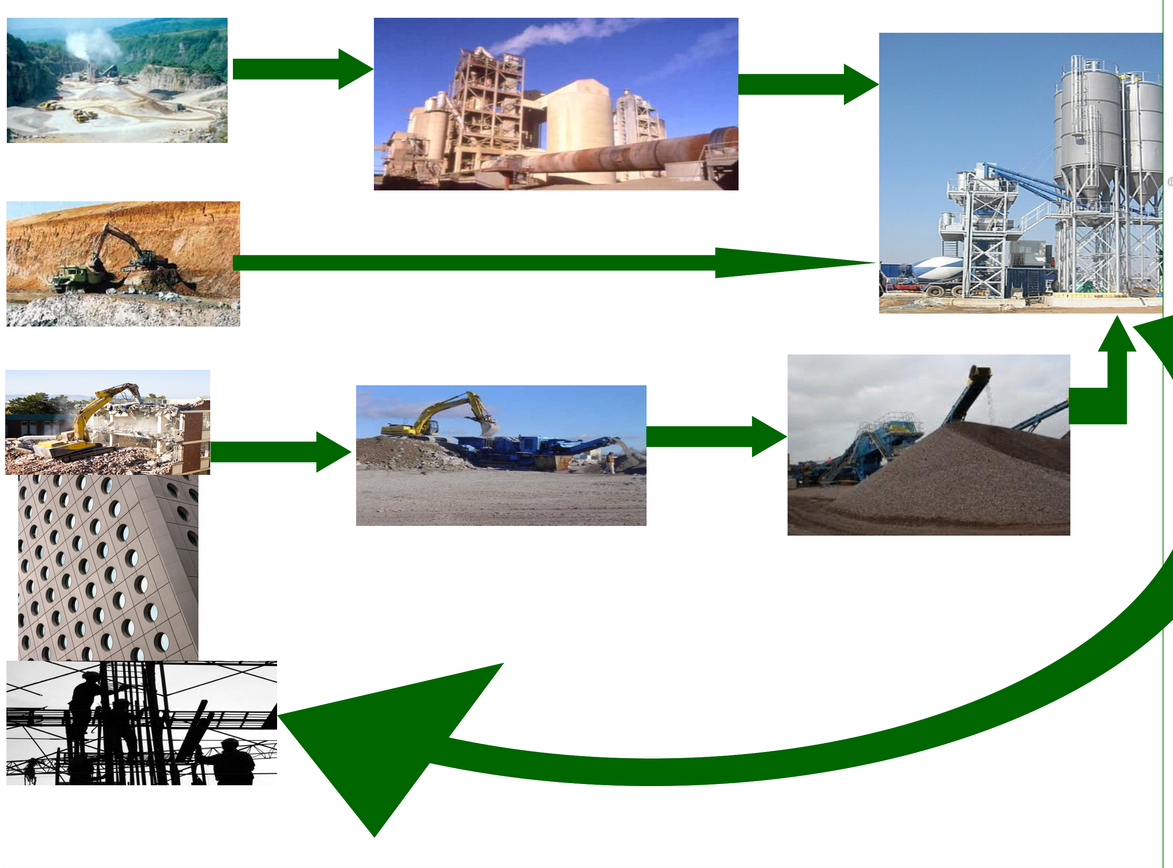
Goal & Scope

Life Cycle Sustainability Assessment for the Production of High-grade Concrete from Construction and Demolition Waste, according to Kloepffer's (2008) formula:

LCSA = LCA + LCC + S-LCA

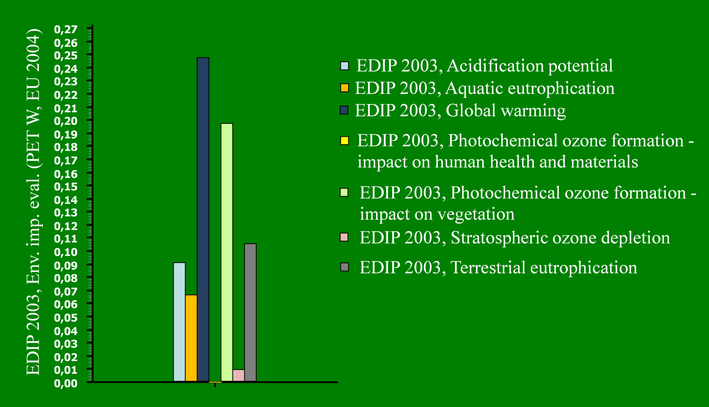
FU: the treatment of 1 ton of EoL material generated from the dismantling and demolition of an EoL building.



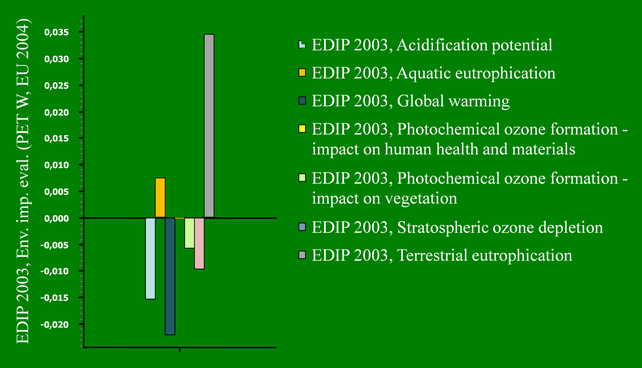
Results

ELCA

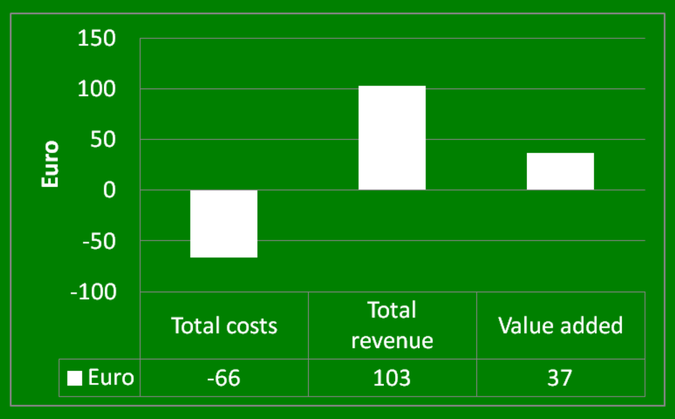
Scenario 1: Wet separation

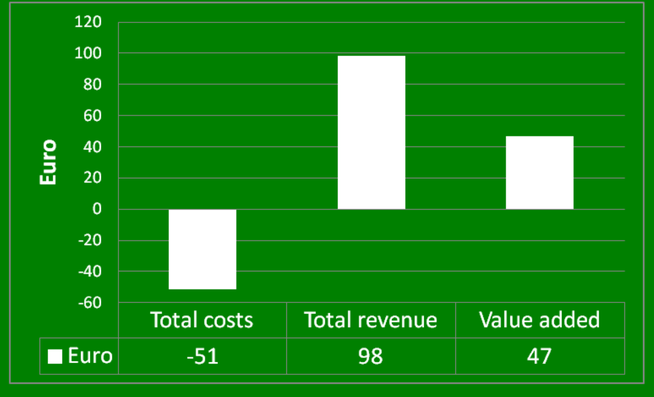


Scenario 2: ADR

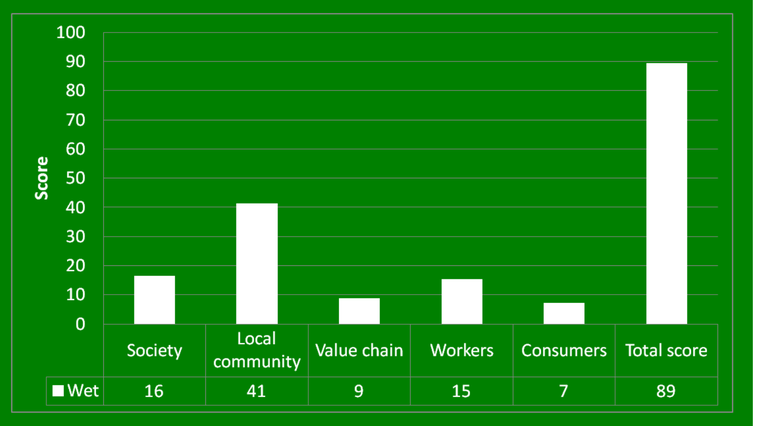


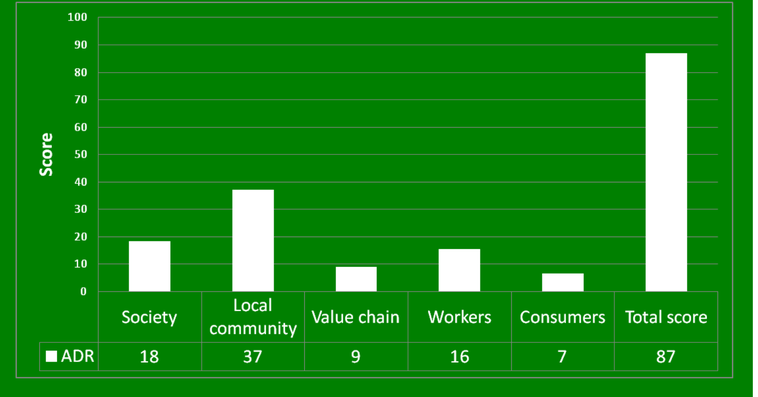
LCC





SLCA





Comparison **Current technology < Innovative Technology** **Current technology < Innovative Technology** **Current technology > Innovative Technology**

Conclusion

The results from the three assessments show that the innovative technology performs better on the environmental and the economic dimension of sustainability, but worse on the social. Since the innovative technology does not perform better on all three dimensions it is recommended that multi-criteria methods be applied to the decision-making for the project, as a next step in the sustainability assessment.

Acknowledgements

This presentation is realized through the financial support of the European Commission in the framework of the FP7 Collaborative project *Advanced Technologies for the Production of Cement and Clean Aggregates from Construction and Demolition Waste* (C2CA), Grant Agreement No 265189.